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Nikolaj Sivek

Western Kentucky University, nikolaj.sivek601@topper.wku.edu

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THE UNDERLYING DYNAMICS OF STUDENT ENGAGEMENT ON
THESIS COMPLETION

A Thesis
Presented to
The Faculty of the Psychological Sciences Department
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
Of the Requirements for the Degree
Master of Science

By
Nikolaj Sivek

May 2016

THE UNDERLYING DYNAMICS OF STUDENT ENGAGEMENT ON
THESIS COMPLETION

Date Recommended March 29, 2016



Dr. Elizabeth L. Shoenfelt, Director of Thesis



Dr. Amber N. Schroeder



Dr. Reagan Brown



Dean, The Graduate School

4/4/16

Date

ACKNOWLEDGEMENTS

I would first like to thank my advisor, Dr. Shoenfelt, for her guidance throughout this project and the confidence she re-instilled in me to finish this project. Along similar lines, I would like to thank my family: Marketa, Maura, Iva, Nicole, and Peter, for encouragement and support throughout this process. Finally, without the influence of Dr. Schroeder, Dr. Brown, and the entire cohort of 2013, this project would not have been conceived or completed. Thank you all for shaping me into what I may become and preventing this project from potentially being the most ironic, unfinished work ever.

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Nikolaj Sivek

May 2016

81 Pages

Directed by: Elizabeth L. Shoenfelt, Reagan D. Brown, and Amber N. Schroeder

Department of Psychological Sciences

Western Kentucky University

Engagement is an increasingly important construct in organizational and educational settings. Research indicates that engagement is positively related to satisfaction, commitment, and performance in the workplace. This study investigated the relationship of Total Engagement to complete a thesis with Self-Determination Theory individual motivational constructs, the personality constructs of Psychological Capital and Core Self-Evaluations, and the experiential construct of Flow Propensity. The results indicated significant relationships between all constructs and engagement. Further, Psychological Capital and Flow Propensity explained 55% of the variance in Total Engagement to complete a thesis.

Introduction

The completion of a thesis requires a composite of skills developed through a graduate training program, thus reflecting competencies necessary for completion of a work project and employment. Within the realm of I-O psychology, skills developed through completion of a thesis project, such as data collection and analysis have previously been documented as critical to employment (SIOP, 1994). Shultz and Kottke (1996) suggested a direct link between development of thesis-relevant skills (e.g., organizing, problem solving, critical thinking, communication, and research evaluation) and employment competencies. In a more recent study, Cable (2013) in a survey of graduates from 2002-2011 found the most important aspect of graduate training relevant to their careers related to conducting/reviewing research and analysis – all inherent in the thesis process. Along similar lines, Kline (2014) evidenced the usefulness of 12 (out of 13) relevant thesis skills in employed master's level graduates. Concerning thesis completion, similar results of increased employability were found in a longitudinal study of engineering master's students (Stiwne & Jungert, 2010). Finally, Morton and Worthley (1995) cited a "bottleneck" in master's level psychology program completion at the thesis stage for various reasons. They suggested this bottleneck generally results from an inability to handle the unstructured, autonomous nature of a research project or a lack of training and preparation in core graduate coursework. In their study, employed graduates noted thesis skills (e.g., the writing and thinking process, collaboration with faculty, and independently conducting and completing a research project) as positive aspects for employment. In a similar light, thesis completion may be viewed as a quality screen,

specifically in producing quality, master's level [I-O] psychologists (Kline, 2014), making a thesis requirement a relevant topic of study.

Consequently, skills acquired through thesis completion are relevant to performance and may transfer to a variety of jobs and organizations. Also relevant to successful performance among many organizations is the construct of employee engagement, as evidenced by the Society for Human Resource Management (SHRM) publication on fostering engagement (Lockwood, 2007). Additionally, the McKinsey and Company report on human capital included engagement as a core component in employee development (Ray et al., 2012). Finally, a key factor in the Towers Watson latest Global Workplace Attitudes report included engagement as an outcome of effective leadership leading to business results. In this study, I examine the relationship of Total Engagement to complete a thesis with the positive constructs of Self-Determination Theory individual motivational components, Psychological Capital, Core Self-Evaluations, and the experiential construct of Flow Propensity.

Positive Constructs

The field of positive psychology focuses on improving the well-being of normal individuals and society beyond that of curing mental illnesses. This paradigm shift is considered an approach of abundance, where positive psychology's goal is the advancement of human well-being, achieved by deviating from reactive, traditional, diagnostic methods (Donaldson, 2011; Seligman & Csikszentmihalyi, 2000). The development of positive organizational psychology (POP) as a field consisted of two complementary divisions of positive organizational behavior (POB) and positive organizational scholarship (POS). Due to conceptual overlap, the differences in the

subfields reflect that of the scientist-practitioner model. POS leans on the scientist end of the spectrum, while maintaining an organization-level focus on positive aspects present in the workplace (e.g., outcomes, processes, etc.; Ko & Donaldson, 2011). Luthans (2002) determined inclusionary criteria for POB constructs included individual psychological capacities that are open to development, empirically measured and validated, and, ultimately, managed by practitioners to improve workplace performance and attitudes. As described by Luthans (2002), POP attempts to add scientific rigor to common knowledge positivity; therefore, employees and employers may benefit from this approach. Often, trends are evidenced through PsycINFO search results. As of 2011, the POP construct of employee engagement had a mere 261 hits (Schaufeli, 2011). As of early 2015, the term produced 1,062 hits. This attests not only to the growing academic interest in employee engagement, but such an immense growth over only four years also speaks to the force of the broader field of POP.

Employee Engagement

Consistent with the positive approach, employee engagement has been referred to as the positive antithesis of burnout (Maslach, Schaufeli, & Leiter, 2001). As an outcome, this description of employee engagement is parsimonious considering the disagreement of the operationalization of employee engagement (e.g., Crawford, LePine, & Rich, 2010; Saks, 2006). These disagreements focus on the operationalization of engagement, and Crawford et al. (2010) provide a succinct review of these nuanced differences, but contend that the common denominator among all operationalizations is a focus on working conditions. Additionally, many operationalizations of engagement use a multidimensional approach: Schaufeli, Salanova, Gonzalez-Roma, and Bakker (2002)

determined the three dimensions to be vigor, dedication, and absorption. Britt (1999) suggested engagement to be comprised of felt responsibility and commitment for above average job performance. Macey and Schneider (2008) may have the widest definition of engagement, suggesting engagement is a composite of affective energy and self-initiated effort with state, trait, and behavioral components. However defined, researchers generally agree on the importance of employee engagement through its established relationships with attitudes, turnover, and performance at both individual and business-unit levels (Crawford et al., 2010).

For the purpose of this study, employee engagement was operationalized as done by Soane et al. (2012). Their measure was theoretically based on Kahn's (1990) definition of engagement, an expression of physical, cognitive, and emotional aspects of one's self during work-role performance and harnessed by the organization. Thus, Soane et al.'s (2012) operationalization is multidimensional. In the Soane et al. (2012) measure, the three sub-dimensions include cognitive engagement, affective engagement, and social engagement. Together, these three sub-dimensions capture engaged work-related behavior. In addition, this operationalization was chosen as it is aligned with other constructs of interest in the present study. Similar to Core Self-Evaluations (CSE) and Psychological Capital (PsyCap), employee engagement as defined by Soane et al. (2012), is comprised of sub-dimensions and considered state-like.

Noting the importance of engagement to practitioners, the Gallup organization has been publishing consultancy research reports on employee engagement for over three decades (Gallup, 2013). This interest in engagement is of no surprise considering early meta-analytic evidence by Harter, Schmidt, and Hayes (2002) that suggested that higher

than average engaged business units (e.g., branches, departments, etc.) were twice as successful on a composite performance criterion (i.e., customer satisfaction–loyalty, employee turnover, productivity, profitability, and safety). Again, an investigation of Fortune Magazine’s list of “100 Best Companies To Work For” evidenced positive relationships between organizations with positive employee attitudes and commonly used accounting ratios (i.e., return on investment and return on assets; Cascio & Boudreaux, 2011), giving further support to the idea that positivity has an effect on the bottom line and, thus, is relevant to practitioners (Fulmer, Gerhard, & Scott, 2003).

Longitudinal research by Gallup (2013), which sampled over 350,000 American employees since 2010, suggested roughly 70% of the American workforce is either not engaged or actively disengaged at work. Disengagement is defined as “checked out,” and active disengagement is considered “acting out their unhappiness,” thus affecting engaged employees negatively (Gallup, 2013, p. 21). Similarly, The Conference Board, a research firm with nearly a one hundred year history, reported that fewer than half (i.e., 47.7%) of American employees are satisfied at work, a declining trend they have noted in the last eight years (Cheng, Kan, Levanon, & Ray, 2014).

Coupling advancements in applied POP with the unfortunate context provided above (i.e., low national and global engagement and satisfaction levels) give reason to apply a positive approach. Having noted the contemporary importance of employee engagement as an outcome related to employee performance and attitudes, this study will add to the literature by examining novel relationships among positive constructs related to engagement.

Before examining the proposed model, some background must be provided. First, this study will draw on the positivity state-trait continuum described by Luthans et al. (2007). Constructs relevant to this study will be provided as examples. These constructs will range from very narrow and pliable to rigid and static. Positive states are momentary and very malleable, such as one's feelings of happiness during flow. The next anchor in the progression is termed "state-like," and this includes the construct of PsyCap. At the opposite end from positive states are positive traits, such as CSEs, which are rigid and dispositional in nature. Employee engagement has been suggested to have both state-like and trait-like features (Crawford et al., 2010) and will not be placed on this continuum due to incongruent research findings. This discussion will begin with the positive experiential state, flow, and demonstrate flow's impact on engagement with a new take on the 'happy-productive' worker hypothesis.

Flow

Flow is considered being in a state of optimal experience and functioning (Csikszentmihalyi, 1991; Nakamura & Csikszentmihalyi, 2009). The initial operationalization of flow was achieved using qualitative techniques where a wide range of hobbyists were interviewed to determine if they shared any commonality in their motivation to participate in leisure activities. The common thread uncovered a shared experience that the hobbyists achieved in their activities, flow (Csikszentmihalyi, 1975, 1991). Captured by Csikszentmihalyi (1975) through qualitative interviews, nine common components emerged that further describe a state of optimal experience.

The nine dimensions of flow are (a) a balance between perceived challenges and personal skills, (b) a merging of one's behavior and awareness, (c) the presence of clear

goals, (d) the availability of immediate and clear feedback, (e) a high level of cognition and focus on the task, (f) a natural sense of control, (g) lost feelings of self-consciousness, (h) a differently and transformed perception of time, and (i) an autotelic or intrinsically rewarding experience (Csikszentmihalyi, 1990; Fullagar & Kelloway, 2009). Dimensions (a), (c), and (d) are considered antecedents of flow, whereas the others are characteristic of experiencing flow (Fullagar & Kelloway, 2013).

Flow at work. Flow must be considered as a state of *optimal functioning* to become relevant to organizations. The work environment is malleable to an extent, and, once certain conditions are met, flow can be encouraged (Llorens et al., 2012). Many of the prerequisite conditions for flow, such as goals, feedback, sense of control (i.e., autonomy), and challenge/skill balance are present in work settings (Csikszentmihalyi, 1975, 1991; Demerouti, 2006). Examining similarities between established, applied theories (e.g., goal setting) sets an applied and theoretical precedence for flow at work. The first dimension of flow, a balance in challenges and skills, is in line with the extensive research on goal setting theory. Goal setting theory suggests performance is highest when goals are specific and challenging, and goal attainment is perceived to be within one's ability (Locke & Latham, 2002). Goal setting theory also requires feedback in order to be most effective; recall that feedback is a necessary component of flow. Originally, the balance between one's skills and perceived challenges served as a necessary prerequisite in experiencing flow. An imbalance is considered when an individual's skill level is greater than the perceived challenge level, resulting in boredom rather than flow. On the other hand, if the challenge is greater than one's skills, the individual will experience anxiety (Csikszentmihalyi, 1975, 1990). Anecdotally, creating

a work environment that fosters flow may decrease common negative transient states such as anxiety and boredom from occurring in a work context.

Flow and job factors. An organizational context can provide or enhance some necessary conditions to achieve flow. To consider other job-related factors, three job-related models will be presented to advocate for flow in a work setting.

Within Hackman and Oldham's (1976) Job Characteristics Model, the definition of autonomy focuses on tasks that are the employee's own responsibility (as opposed to closely supervised, instructed tasks), resulting in the employee's free decision making in how to accomplish the job. Autonomy is conceptually similar to the sense of control requisite in flow (Demerouti, 2006). In fact, Fagerlind, Gustavsson, Johansson, and Ekberg (2013) demonstrated jobs with high decision latitude (i.e., autonomy) were related to flow, while controlling for job aspects such as intensity and difficulty of the work. Applied to a different job-related model, Job Demands-Resources (JD-R) theory, Bakker and Geurts (2004) also found jobs high in resources, such as autonomy, were related to flow. Beyond autonomy, Fullagar and Kelloway (2009) added skill variety to the list of job characteristics that relate to flow experiences. In a similar direction, Fagerlind et al. (2013) suggested 'active' jobs increase the likelihood of experiencing flow. Within a third job-related model, Job Demands-Control theory, Fagerlind et al. (2013) operationalized active jobs as ones high in demands (e.g., time constraints, conflicts, etc.) and high in control (e.g., job uses broad skills, autonomous, etc.). This research suggests factors such as autonomy and skill variety can help foster flow within organizations.

Indeed, Aubé, Brunelle, and Rousseau (2013) focused on ecological validity when determining that flow is related to team performance. They designed a team-oriented task that was highly autonomous, included six and a half hours of various, interdependent tasks (i.e., having high skill variety), and provided various points of feedback, which gave light to how organizations may be able to increase flow experiences. Results indicated flow predicted team performance in teams with higher communication and commitment. Although Aubé et al. (2013) found a moderated relationship (i.e., only for those high in team goal commitment), the presence of this relationship gives weight to designing tasks conducive to flow experiences. Researchers have replicated the findings that three characteristics (i.e., skill variety, autonomy, feedback) are related to flow (Fullagar & Kelloway, 2009; Ghani & Desphande, 1994; Nakamura & Csikszentmihalyi, 2009). Additionally, the inherent and multiplicative function of flow, where the positive experience of flow naturally encourages individuals to continue in and return to an activity, may translate to an organizationally cost-effective approach to improve motivation (Nakamura & Csikszentmihalyi, 2009).

Outcomes of flow. Flow is relevant to practitioners considering flow's relationships to positive organizational outcomes, attitudes, and performance. Concerning job attitudes, it is no surprise flow displays positive relationships with employee subjective well-being (Fullagar & Kelloway, 2009), job satisfaction (Bryce & Haworth, 2002), commitment (Csikszentmihalyi et al., 2005), and intrinsic motivation (Keller, Ringelhan, & Blomann, 2011). In terms of performance, flow has established positive relationships with performance-related concepts such as skill development (Csikszentmihalyi et al., 2005; Ghani & Desphande, 1994). Engeser and Rheinberg

(2008) determined flow is a predictor of performance in learning-oriented activities, as moderated by situational factors (i.e., task importance) and individual factors (i.e., achievement motivation). Demetouri (2006) also found a relationship between flow and performance, but only among highly conscientiousness employees. Though the link between attitudes and flow is much stronger than the link between performance and flow, practical application of flow requires an understanding of conflicting theories in the structure and dimensionality of flow.

Theoretical problems in application. Flow is defined as optimal functioning (Csikszentmihalyi, 1991); thus, one may have expected more established relationships with performance variables. Researchers explain this issue as a consequence of inconsistencies in theory and measurement (Engeser & Rheinberg, 2008). In addition, theoretical issues must be addressed prior to practical application. This is often a criticism of POP, which includes flow (Cameron, Dutton, & Quinn, 2003; Donaldson & Dollwet, 2013; Luthans, 2002). Highly relevant in an applied setting, an understanding of the core factors of the nine flow dimensions could point practitioners to how to adapt flow for positive performance outcomes. For example, Fullagar and Kelloway (2009) determined almost three quarters of the variance in the flow experience is due to contextual, task characteristics rather than dispositional factors. This result would imply practitioners stay away from selection and move toward concepts of job design. Of course, practical use of flow is contingent on the development of a nomological network of flow relationships.

After gaining attention in the workplace literature, recent studies have focused on developing a sound functioning theory of flow that is empirically validated (Nielsen & Cleal, 2010; Salanova, Bakker & Llorens, 2006). To determine a functional model of

flow experience, researchers have compared situational task characteristics to stable job characteristics (Nielsen & Cleal, 2010), compared flow frequency to flow intensity (Bakker, 2008), distinguished between state and trait aspects of flow (Fullagar & Kelloway, 2009, 2013; Jackson & Eklund, 2002), and compared a three factor model (i.e., enjoyment, absorption, intrinsic motivators; Bakker, 2008) to a two factor model (i.e., enjoyment and absorption; Ghani & Desphande, 1994; Llorens et al., 2012). The latter issue has received the most attention among researchers, as it concerns the placement of intrinsic motivation as either an antecedent (i.e., intrinsically motivated employees are more prone to experience flow) or central to the experience (i.e., employees experiencing flow find the task or job intrinsically motivating).

Some researchers credit these mixed results about factor loadings to the dimensionality of flow as stemming from the various measures of flow (Fullagar & Kelloway, 2013). An all-encompassing measure consisting of all nine flow dimensions as a global construct developed by Jackson and Eklund (2002) has been, arguably, the principal instrument used to assess flow (Fullagar & Kelloway, 2013). Moreover, this global measure has been used in different contexts (e.g., sports, work, and music; Nakamura & Csikszentmihalyi, 2009) and for different levels of analysis (i.e., state and disposition; Jackson & Eklund, 2002). Despite its popularity, sound psychometric properties, and support from the proverbial father of flow, the global measure of flow may confound antecedents and aspects of the actual experience. (Fullagar & Kelloway, 2013; Nakamura & Csikszentmihalyi, 2002, 2009). Jackson and Eklund's (2002) model assumes nine dimensions in assessing the occurrence of a flow experience, though it is established that some requisite antecedents are required. Nakamura and Csikszentmihalyi

(2002) determined three of the nine dimensions are task-related antecedents to a flow experience: the balance of challenge and skill, specific goals, and feedback. It appears the resolution of one issue to develop a functional theory of flow uncovers another. Consider further, Bakker (2008) developed and validated the WOrk-reLated Flow scale (WOLF) based on exploratory and confirmatory factor analysis results that supported the three factor model noted previously (i.e., enjoyment, absorption, intrinsic motivators). The WOLF is prevalent in European studies and has been translated into various languages (Bakker, 2008), but conceptually does not replicate empirical evidence of a two factor model (e.g., Ghani & Desphande, 1994; Llorens et al., 2012), as the WOLF is based on evidence of a three factor model.

Solutions to problems. As demonstrated, the less established link between flow and performance is likely due to various operationalizations, measures, and disputes in a sound *functioning* theory or established nomological network. A theoretical solution may exist within the happy-productive worker hypothesis. This theory, rooted in equity theory, suggests satisfied employees reciprocate with more effort to the organization, leading to increased performance (Taris & Schreurs, 2009). Meta-analytical evidence points to a modest range of corrected correlations (i.e., .19 to .31) between job satisfaction and performance; however, academicians and practitioners alike consider the relationship to be weak (Fisher, 2003). Despite this, proponents of this hypothesis offer a caveat because generally the relationship of performance and satisfaction is examined at the individual level. Some studies suggest that the relationship may be stronger when examined at an aggregated level of employee satisfaction and an aggregated business unit level of performance (Fisher, 2003; Fulmer, et al., 2003; Harter, et al., 2002; Taris &

Schreurs, 2009). Flow is an inherently positive and enjoyable experience that relates to both performance and satisfaction. Thus, it may not be that ‘a happy worker is more productive,’ but rather, ‘a happy worker is more happy to be productive.’ Thus, practical implications of flow may be achieved when flow is viewed as solely a desired experiential state at work (Nielsen & Cleal, 2010; Ullén et al., 2012).

Harter et al.’s (2002) meta-analysis differentiated between employee engagement and job satisfaction. Specifically, job satisfaction is a broader, more distal, and affective evaluation of work attitudes; employee engagement, as measured by the Gallup Workplace Audit (GWA; Gallup, 2013), is a more narrow measure of attitudes (e.g., loyalty and commitment), but also taps into antecedents of engagement that are under the control of the respondent’s manager. This is important to mention as the Intellect Social Affective operationalization (ISA; Soane et al., 2012) is not as narrow or applied as the GWA, or as broad as general job satisfaction. Thus, engagement may be more practical in application than the construct of job satisfaction. This is especially true when also considering flow’s potential effect in the relationship. Recall engagement has been operationalized as vigor, dedication, and absorption (Schaufeli et al., 2002). Thus, employees who experience work engagement and specifically report high levels of absorption, likely experience more frequent flow experiences as well (Sweetman & Luthans, 2010). Due to the conceptual similarities between Bakker’s (2008) and Schaufeli et al.’s (2002) operationalizations of flow and engagement, the potential of this relationship should be demonstrated without the use of their measures, thus:

Hypothesis 1: Flow Propensity will be positively related to engagement.

The proposed model suggests flow experiences play a role in developing goal attainment resources in individuals (i.e., PsyCap) and should relate to engagement, as previously suggested theoretically (Sweetman & Luthans, 2010) and empirically (Avey, Wernsing, & Luthans, 2008).

PsyCap

In a general sense, capital can be defined as value that is ultimately used in the attainment of goods or services. For this purpose, organizations are interested in measuring the value of intangibles to better understand their overall worth. This is evidenced in common use of methods such as Tobin's Q (a market value to book value ratio) or calculated intangible value (CIV) equations (Luthans, Luthans, & Luthans, 2004), both of which look at value through an accountancy lens. Schultz (1961) noted the importance of human capital (i.e., the acquisition of knowledge and skills), calling it a unique feature of our economic system, and a major reason for growth in tangible capital (i.e., currency). Also intangible to organizations, PsyCap refers to *how* employees attain their human capital, defined as an individual's positive, developable capacities in goal attainment within a specified context. PsyCap is operationalized through four psychological capacities or resources that interact as one core construct in attainment of valued outcomes (Luthans et al., 2004; Sweetman & Luthans, 2010). Each sub-dimension of PsyCap (i.e., hope, optimism, efficacy, and resilience) will be reviewed including specific instruments used to measure each.

Hope. As a simple, all-encompassing definition, hope can be thought of as “the will and the way” (Luthans, Youseff, & Avolio, 2006, p. 65). Consider hope a positive motivational component that provides the energy to initiate task-directed behavior and

incorporates contingency planning aspects that suggest how an individual will achieve their goals. Snyder et al.'s (1996) state hope scale was adapted to measure PsyCap hope and requisitely included the two sub-dimensions of hope, agency and pathways. Agency refers to one's propensity in initiating and sustaining behaviors, and pathways is one's propensity to create direction to goal-directed behavior (Snyder et al., 1996). Luthans et al. (2010) referred to agency as willpower, and described it as a motivating factor in starting and continuing behavior to achieve a goal. Further, the same researchers described pathways as proactive equifinality in the face of hindrances. Individuals high in hope pathways will find alternative routes in attaining goals, or even have those routes predetermined. The theoretical implication of hope is that individuals high in hope should approach problems in such a way that enables goal achievement more frequently through using or generating multiple pathways to the goal, and has been demonstrated in the workplace (e.g., Peterson & Byron, 2008). In a cross-sectional study of employees in three industries, Peterson and Byron established evidence that employees higher in hope had higher performance ratings over a year. Snyder (2002) previously noted the success of hope interventions in academic and clinical settings, making it no surprise the Psychological Capital Intervention (PCI) has been successful in building hope in employees (Luthans, Avey, Avolio & Peterson, 2010; Luthans, Avolio, et al., 2007; Luthans, Avey, & Patera, 2008).

Processes to build hope in employees include setting specific and challenging goals, contingency planning for multiple pathways to accomplish set goals, and preparing individuals to be persistent in using multiple pathways (Luthans et al., 2006). Luthans et al. (2004) further set other guidelines in building hope for PsyCap, such as using a

‘stepping method’ to break goals into smaller successes (Snyder, 2002), acknowledging enjoyment in the process, and a preparation to ‘re-goal’ when necessary (Luthans, 2004).

Optimism. PsyCap optimism maintains a deeper context than a layperson ‘happy-go-lucky’ definition, and also deviates from some traditional, trait-like, academic definitions. PsyCap optimism combines expectations and attributions, thus, is defined as expecting positive occurrences and developing an internal belief you caused the positive outcomes. Drawing on work by Seligman (2011), the concept of learned optimism is based on individual expectations and concepts of self-fulfilling prophecies. This would suggest, beyond ability and motivation, an optimistic expectation (i.e., expecting “things will work out”) aids in goal attainment (Schulman, 1999). To further demonstrate the importance of developing optimism, Kluemper, Little and DeGroot (2009) conducted a cross-sectional study investigating whether measures of state or trait optimism predicted more variance in job-related outcomes. A job analysis was performed to develop an objective task performance measure for the employee sample. It is important to mention a job analysis was conducted in order to give more support to the job-related outcomes evidenced in Kluemper et al. (2009). Using multiple regression techniques, Kluemper et al. suggested that while controlling for trait affect, state optimism explained additional variance in job-related outcomes, providing theoretical implications for developing optimism in the workplace.

Luthans and colleagues (2010) described their summation of two complementary optimism frameworks: Seligman’s (2011) optimism as an attribution framework and Carver and Scheier’s (2002) expectancy framework (Luthans et al., 2006) PsyCap optimism deviates from Carver and Scheier’s model by being operationalized as state-

like, thus including short-term affective and motivational components (Luthans et al., 2006). Similarly, Carver and Scheier (2002) made a distinction between pessimists and optimists, where the latter have an expectation of good events. Thus, when faced with hindrances, optimists employ a behavioral approach system (BAS), which can act as a motivational component in goal-directed behaviors and lead to higher goal success (Carver, Sutton, & Scheier, 2000; Elliot & Church, 1997). This expectation of good events, as opposed to a behavioral inhibition system (BIS), creates activation to goal-directed behaviors and ultimately, leads optimists to experience more achievement in tasks or goals. Distinctively, the attribution framework of optimism states that positive events are casually internalized and negative events are externalized (Luthans et al., 2010). Luthans (2012) described the complementary nature of the two optimism theories; the attribution framework of Seligman's (2011) optimism helps in creating positive internalizations after accomplishing a goal, creating the expectation (described in Carver and Scheier's [2002] framework) that future goal directed behavior also will be successful. Further, this synthesis should promote efficacy, the third sub-dimension of PsyCap.

Efficacy. Similarly positively oriented but distinctive in functioning, PsyCap efficacy differs theoretically from hope and optimism, and is considered to be confidence (Luthans et al., 2012). In the PsyCap model, efficacy is contextual and task-specific (Luthans et al., 2012). To draw a distinction between previously described hope and optimism, consider a general scenario: an employee may perform one task in their job well and develop task confidence (i.e., efficacy). This task-specific confidence is not necessarily hope or optimism. Confidence about a given task does not imply that the

employee will or will not develop a more general, pessimistic expectation of a broad work outcome, such as termination (Avey, et al., 2010; Luthans et al., 2010). This example also serves as good conceptual basis for how latent functions of the sub-dimensions of PsyCap interact.

Efficacy has an extensive background. Developed by Bandura (1977), there are four general sources of efficacy relevant to building one's PsyCap: mastery experiences, vicarious modeling, social persuasion, and arousal states (Bandura, 1977; Luthans et al., 2004). In a field experiment, McNatt and Judge (2008) demonstrated that an efficacy intervention, through Gist's (1987) established method of verbal persuasion and modeling, increased positive job attitudes in a sample of second-year tax auditors. Gist's article noted the popularity and importance of verbal persuasion (i.e., statements of confidence in the target person by a respected other) in self-efficacy development, but deemed it lacking in a practical method of application. McNatt and Judge (2008) added a practical component through modeling by sending correspondence letters from various auditors' recruiting departments to participants that included statements of confidence. The content of these letters were finely tuned to reflect the auditor's résumé, drawing information from an initial interview and creating scenarios that would build efficacy. The letters were encouraging; they disclosed the competitive hiring process auditors went through, reaffirmed their qualification for success, and (based on individual résumés) contained reminders of past successes to develop efficacy. In a frequently cited meta-analysis of self-efficacy, Stajkovic and Luthans (1997) evidenced the link between self-efficacy and performance. Developing PsyCap efficacy would lead employees to

volitionally set higher goals, thrive on these challenges, and, thus, be self-motivated (Luthans et al., 2006).

Resilience. Resilience is operationalized in PsyCap as an individual's capacity to rebound from setbacks, repeatedly adapting positively (Avey, Luthans, & Jensen, 2009; Luthans et al., 2010). Only in theoretical implications is resilience suggested to be developable, though few studies have attempted to measure a resilience intervention in the workplace aside from those focused on PCI (Luthans et al., 2004). In one such study, Luthans et al. (2008) developed a two-hour, web-based PCI, and recruited a sample of 364 employees from various industries to complete positive leadership training. A pre-test post-test design was utilized with a 10-day lapse between measures, as well as an active placebo for the control group. Results indicated the treatment group had a significant increase in PsyCap when compared to the control group, controlling for relevant variables (e.g., pre-PsyCap levels, job level, and demographics; Luthans et al., 2008).

In essence, the core construct of PsyCap functions by combining the sub-constructs of self-efficacy, optimism, hope, and resilience into a higher-order construct that explains significantly more variance and has greater predictive outcomes than each construct alone. To bring it all together, an employee in a positive state of development (i.e., high PsyCap) engaged in goal-directed behavior would have a positive expectation and attribution of meeting said goal (i.e., optimism). Optimism further encourages action to that goal, and with hope adding the will and the way to achieve goal. Repetition then maintains the effort needed for goal attainment throughout similar tasks (i.e., resilience). As these work behaviors are repeated and strengthened, the employee would gain the

confidence to initiate and be motivated toward success (i.e., efficacy). As success becomes more frequent, the likelihood of hindrances being detrimental diminishes (i.e., resilience), which leads to valued outcomes at work (Luthans et al., 2006; Sweetman & Luthans, 2010). Thus, PsyCap is the “positive appraisal of circumstances and probability for success based on motivated effort and perseverance” (Luthans et al., 2007, p. 550).

The remainder of this review will focus on three inextricable aspects of PsyCap: (a) PsyCap is a higher-order multidimensional construct consisting of four standalone constructs (i.e., hope, optimism, efficacy, and resilience), which on their own have a sound theoretical and empirical history; (b) PsyCap is state-like and, consequently, developable (i.e., can be trained or coached); and (c) PsyCap leads to valued organizational and individual outcomes. Each aspect will be reviewed.

PsyCap as a Higher Order Construct. Examining PsyCap will require background in the nature of higher-order, multidimensional constructs. In order for a construct to be considered higher-order and multidimensional, both empirical validation and sound theory building must be used harmoniously (Johnson, Rosen, & Chang, 2011). In their seminal empirical work on PsyCap, Luthans et al. (2007) demonstrated the levels of the four sub-dimensions of PsyCap were positively related to performance and satisfaction. Most importantly, Luthans et al. demonstrated that together the four sub-dimensions explained more variance than each of the sub-dimensions individually, which is the critical criterion in establishing higher order constructs. That is, the construct is considered parsimonious because one variable can account for multiple variables and cover more bandwidth in terms of explaining variance in outcomes (Johnson et al., 2011).

Sound theory also is required for a construct to function on a higher-order multidimensional level. Often, common method variance (CMV) may be the reason for expected high inter-correlations and is a concern in higher-order constructs (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Avey et al. (2010) collected PsyCap data over a period of time to slightly reduce the potential of this effect. Podsakoff et al. (2003) first recommended using different sources as a means of controlling for the bias of CMV; noting this is not always possible, the second suggestion included temporal separation, as in the case of Avey et al. (2010) waiting one to two weeks, where the dependent variables in the study were measured in the second week. Further, based on the recommendation made by Johnson et al. (2011) concerning higher-order constructs, Avey et al. measured a myriad of variables to establish the theoretical distinctiveness of PsyCap. By measuring observed relationships to other variables, Avey et al. accomplished a crucial step in construct development by establishing PsyCap's nomological network (Cronbach & Meehl, 1955).

Considering the nature of higher-order constructs, Luthans et al. (2007) conducted a study with employees in a tech firm assessing PsyCap statistically for discriminant, convergent, and criterion validity. In their study, PsyCap demonstrated discriminant validity with demographic variables (i.e., age and education), as well as trait factors of agreeableness and openness. Conversely, the same study demonstrated strong convergent validity with CSE, and moderate relationships with extraversion and conscientiousness. PsyCap was the strongest predictor of performance in their study, establishing criterion validity. The PCQ and PCI have demonstrated similar construct validity in other languages and cross-cultural samples (Azanza, Domínguez, Moriano, & Molero, 2014;

Luthans et al., 2005), suggesting the presence of construct fidelity. In a more recent, cross sectional study, Avey, Luthans, and Youssef (2010) replicated the empirical results found in Luthans et al. (2007); they included an extensive list of convergent and discriminant measures for a more comprehensive theoretical framework of PsyCap. Avey et al. (2010) found negative relationships with measures of cynicism, quitting intentions, and counterproductive work behaviors (CWB). The same study found positive relationships with convergent measures of extraversion and conscientiousness, occupational citizenship behaviors at individual and organizational levels (OCB-I/OCB-O), and person-organization (PO) and person-job (PJ) fit. Avey et al. also found evidence of statistically significant greater predictive variance of performance and attitudes than CSEs. These various relationships and statistical measures indicate PsyCap is a higher order construct.

Developing PsyCap in Organizations. Having established PsyCap as a higher order construct empirically and theoretically allows for the second core aspect of developable, i.e., it can be trained and is considered an efficacious intervention method (Luthans et al., 2006). The construct of PsyCap lies on the ‘state-like’ anchor of the state-trait continuum described earlier. According to Luthans et al. (2007), this inherently includes an environmental referent (e.g., the workplace). This component is central to PsyCap and POB as a field. Including traditional constructs that are reliable and valid opens the door for development; as the adage goes, “what gets measured – gets done” (Jones & Bearley, 1996, p. 155) Once measured, adapting techniques, generally from clinical psychology, PsyCap uses the workplace referent to develop the capacities of hope, resilience, efficacy, and optimism in employees. Finally, drawing theoretically

from each individual sub-dimension, the four interact in latent a manner, affecting each other and creating positive upward spirals that relate to valuable positive outcomes. Considering the necessary environmental context, successful PsyCap interventions should help employees help themselves.

As employees develop PsyCap, the processes used in successful goal attainment become more routine and frequent. It is conceivable and consistent with established theories within each construct that PsyCap should increase over time. Though not empirically established to the author's knowledge, successful interventions of PsyCap would tautologically increase behavioral approach systems. For example, an employee who experiences an increase in PsyCap would theoretically increase frequency of goal directed behavior. Individuals with more positive ascriptions (i.e., optimism) know how and what to do in terms of goal direction (i.e., hope), would feel more confident in doing said behaviors (i.e., efficacy) and be more capable of 'bouncing back' if obstacles surface (i.e., resilience). PsyCap is developable, thus training employees to help themselves in the cognitive processes used for goal attainment should increase the importance of further understanding PsyCap.

Luthans, Avey, Avolio, Norman, and Combs (2006), estimated a 270% return on investment of a two-and-half-hour micro-intervention of PsyCap in a sample of manager engineers. Though a conservative estimate, the practical significance of the added predictive power was defended through theoretical implications of PsyCap's state-like nature.

PsyCap Outcomes. Besides theoretical estimates, PsyCap has empirical relationships with positive outcomes. As previously described within the higher order

construct section, PsyCap has demonstrated positive relationships with desired attitudinal outcomes (i.e., satisfaction, commitment, and well-being) and negative relationships with undesirable attitudes (i.e., cynicism, turnover intentions, stress, and anxiety; Avey et al., 2007). The same meta-analysis found relationships with desired behaviors (i.e., generalized performance) and expected relationships with extra-role performance (i.e., OCBs and CWBs). Perhaps the most interesting finding in this meta-analysis, regardless of the performance measure (e.g., self-report, supervisor appraisals, or objective data), correlations between PsyCap and performance did not vary in the extent PsyCap predicted performance. According to Avey, Reichard, Luthans, and Mhatre (2011), validity coefficients generally tend to drop when analyzing different sources in meta-analytical procedures, but in the case of PsyCap, additional sources (i.e., self-report) contributed to the validity. Anecdotally, the power of PsyCap can be evidenced in research that now spans 12 countries (Wernsing, 2014), and into realms outside of organizational psychology, such as higher education (Siu, Bakker, & Jiang, 2013). As engagement and PsyCap are both state-like constructs, are highly reliant on contextual factors (i.e., work), and are positive, the relationships between the two should replicate.

Hypothesis 2: PsyCap will be positively related to engagement.

Contemporary models of predicting job performance and attitudes are incomplete without a dispositional factor. Accordingly, CSEs are significantly related to job engagement (Rich, LePine, & Crawford, 2010), though few examples in the literature specifically relate CSEs to employee engagement. Further, to the author's knowledge, no empirical investigation of PsyCap and CSE sub-dimensions is evidenced in literature,

though conceptual relationships by Avey et al. (2010) will be investigated in subsequent sections on CSE.

Core Self-Evaluations

Avey (2014) recently pointed out the lack of research on antecedents of PsyCap, and since has provided evidence that individual differences (e.g., CSE) predict nearly a quarter of PsyCap variance. Accordingly, the proposed model will attempt to replicate these findings and investigate CSE's role in predicting PsyCap.

Defined as stable, basic appraisals individuals hold about themselves (Judge & Bono, 2001), the construct of CSE consists of four sub-dimensions (i.e., self-esteem, self-efficacy, emotional stability, and locus of control). The sub-dimensions share three components that theoretically link CSE as a dispositional factor in predicting job satisfaction - evaluative, fundamental, and broad. These components are viewed as criteria and suggest each individual trait must be self-evaluative, fundamental, and broad in scope (Judge & Bono, 2001). Chen (2012) provided an excellent overview: *Evaluative* reflects a deeper level than descriptive; for example differentiating between being a quick learner (descriptive) and a worthwhile person (evaluative). *Fundamental* refers to the notion that the inclusionary traits incorporate more specific, established traits; for example, emotional stability has components of stress resilience and negative affectivity. *Breadth* references generalizability to other contexts, situations or environments. The latter two criteria implicate a dispositional aspect; when combined in function, the four sub-dimensions of CSE are explanatory in how satisfied one individual feels at work and in life (Chen, 2012; Judge & Bono, 2001). Thus, CSE is broad enough to be a predictor in

the model, and though the state and trait distinction is clear, it is likely individuals will at least bring some of their CSE to work, so to speak.

Traits meeting these three criteria suggest an underlying model of how individuals create basic, subconscious conclusions about themselves, others, and world-views (Judge, Locke, Durham & Kluger, 1998). According to Judge et al., self-esteem, generalized self-efficacy, internal locus of control, and emotional stability are constructs that meet these criteria.

From a statistical perspective, CSE sub-dimensions are similar to the aforementioned PsyCap sub-dimensions in terms of predictive variance. The sub-dimensions are correlated and factor load onto the higher order CSE trait (Judge & Bono, 2001). Together, the four constructs explain greater variance in predicting job satisfaction (Judge et al., 1998), performance as task activity, productivity (i.e., sale volume), and supervisor ratings (Erez & Judge, 2001) than each construct alone. Using a meta-analytic technique, CSE has evidenced moderate to strong relationships with job and life satisfaction ($r = .36$ and $r = .54$, respectively), affective commitment ($r = .30$), turnover intention ($r = -.26$), intrinsic motivation ($r = .33$), goal commitment ($r = .42$), performance at the task level ($r = .19$), extra role behaviors ($r = .23$), counterproductive task behavior (CWB; $r = -.17$), and salary level ($r = .33$; Ferris, Johnson, Rosen, & Tan, 2011).

Implications from the meta-analysis (Ferris et al., 2011) suggest that individuals with higher CSE generally set more challenging goals. Combined with high goal commitment and intrinsic motivation, CSE studies (i.e., Gagne & Deci, 2005; Judge, Van Vianen & DePater, 2004) suggest high CSE individuals achieve challenging goals

through positive ascriptions of tasks and expectations of outcomes. According to Ferris et al. (2011), these relationships with self-regulated motivation, goal commitment, and persistence increase success. Further, individuals with positive CSE have a general tendency to positively evaluate themselves as able (i.e., generalized self-efficacy), worthy (i.e., high self-esteem), and in control of their lives (i.e., locus of control; Judge et al., 2004), thus demonstrating the theoretical interplay among sub-dimensions. Conceptually, within an approach/avoidance framework, the four sub-dimensions become indicators of CSE and explain why they are related to various valued outcomes within organizations (Judge et al., 1998). The relationship to valued outcomes is theorized to function by direct and indirect means - directly, by positive generalizations, where positive views spill over to affect multiple outcomes similarly, and indirectly, as the relationship to positive outcomes is explained via cognitive appraisals and behavioral persistence in goals (Judge et al., 1998).

Hypothesis 3: CSE will be positively related to engagement.

In predicting work outcomes, a comprehensive model must incorporate affective, behavioral, and cognitive components, with recognition of dispositional, state, and contextual factors. An important factor that must also be considered is how this dynamic is interpreted by the individual in guiding future behaviors, which introduces the motivational framework of self-determination theory.

Self-Determination Theory

In the most general sense, motivation is energy to initiate and persist in behavior. Motivation is a classic construct in Psychology as a field. Even distinguishing between intrinsic and extrinsic job motivation has had “a *resurgence* of interest in the proposed

dichotomy,” (Centers & Bugental, 1966, p. 193; emphasis added) which has seemingly not ceased. Indeed, Cerasoli, Nicklin, and Ford (2014) compiled 40 years of (intrinsic) motivation research and determined a corrected predictive correlation with performance, ranging from moderate ($r = .21$) to strong ($r = .45$). Though scientific interest regarding intrinsic and extrinsic motivation has not ceased, it certainly has evolved, in part due to self-determination theory (SDT).

SDT Background. Self-determination theory falls under the organismic dialectical approach, thus considered a meta-theory that integrates established, sometimes conflicting, theories (Ryan & Deci, 2000, 2002). The term organismic dialectical is useful in understanding intertwined aspects of SDT that include innate growth tendencies, the interplay of person and environment, and the resulting regulation or motivation experienced by individuals. As a meta-theory, SDT is *organismic* in several ways. Most blatantly organismic, SDT parallels laws within biology, stating organismic persistence relies on meeting specifiable needs within its environment (Ryan & Deci, 2002). SDT assumes that human beings have an inherent desire to understand a complex, but unified sense of self (Deci, Eghrari, Patrick, & Leone, 1994; Ryan & Deci, 2002). Additionally, SDT acknowledges that affect, behavior, and cognitions do not happen in a vacuum and that people have an inherent desire to integrate this complex sense of self with their environment. This integration process is dynamic because SDT incorporates a social-contextual aspect (Ryan, 1995). The social-contextual aspect is the dialectical crux that separates SDT from seemingly deficient motivation theories. The extent that the person-environment evaluation supports or hinders the three basic psychological needs (i.e., autonomy, competence, and relatedness), according to SDT, is the main determinant of

motivation (Vallerand, Pelletier, & Koestner, 2008). Well-being and motivation are the outcome of said needs being met within a work context (Deci et al., 2001).

SDT Psychological Needs. The inherent psychological needs of autonomy, competence, and psychological relatedness draw different psychological states, that when met, achieve intrinsic or internalized forms of motivation. SDT contends these are individual factors that rely on how individuals perceive the extent each is met, thus, the SDT acknowledgement of social and contextual components. Autonomy is supported when an individual interprets social and contextual factors as conducive for recognizing their own initiation in goal direct behaviors. (Vallerand et al., 2008), For example, experiencing *autonomy support* within the SDT framework can be in the forms of choosing a task, acknowledgement of feelings with feedback, and opportunities for direction one's self in a task (Ryan & Deci, 2000). The need for *competence support* would require successes in challenging tasks that lead to valued outcomes (Deci et al., 2001). Similarly, these necessarily rely on the social (e.g., feedback, knowledge of successful results) or environmental (e.g., optimally difficult task) for an individual to feel intrinsically motivated. The final need, *psychological relatedness*, draws on earlier developmental psychology by associating with feelings of security, being connected to others by caring for them and being cared for, and perceiving are belongs to one's community or with other individuals (Ryan & Deci, 2002; Vallerand et al., 2008).

SDT as Motivation. SDT considers motivation (i.e., initiating energy, providing direction, and persisting in energy toward goal or task) on a spectrum, which ranges from amotivation to intrinsic motivation. Amotivation is considered a state where individuals merely go through motions and act without intent. This contrasts with intrinsic

motivation where in the most general sense, behaviors are driven by the enjoyment gained in doing the behavior (Cerasoli et al., 2014; Ryan & Deci, 2000). More technically, Ryan and Deci (2000) define intrinsic motivation as the inherent propensity to search for new challenges and learn new things through using one's psychological capacities, thus further developing those capacities. For practitioners, the incorporation of the aforementioned social-contextual aspect is important, as work is after all, a social context. This encompasses a sub-theory within SDT, cognitive evaluation theory (CET), which includes how individuals evaluate their social context. This inclusion of the environmental and social factors in either supporting or inhibiting self-determined motivation is critical to SDT. This is achieved by how an individual interprets their psychological needs as met or not (Ryan & Deci, 2000). To provide example of this advanced framework, consider an individual intrinsically motivated to be in shape; surely, the type of feedback (e.g., positive or negative) received from their trainer can be either supportive or inhibitory (Vallerand, et al., 2008). Further, SDT accepts that support or inhibition would vary by the individual in how they interpret such feedback in predicting motivation (Ryan & Deci, 2000).

An additional sub theory, organismic integration theory (OIT), evidenced through empirical findings, adds practical value to SDT (Deci & Ryan, 1985, 2000). According to the SDT motivation spectrum, extrinsic motivation consists of four sub categories: external regulation, introjected regulation, identified regulation, and integrated regulation. As intrinsic motivation is necessarily inherent, Deci and Ryan (1985) empirically noted individual, social, and contextual circumstances that allow for these more internalized forms of extrinsic motivation. Thus, a continuum of motivation exists ranging from

autonomous to controlled behaviors. This leaves open the idea that extrinsic rewards, through various processes, can be internalized (Gagne & Deci, 2005). The most volitional and autonomous of internalized extrinsic motivation is *integrated regulation*. When an employee's motivation is integrated regulation, an employee has accepted their work behaviors as a full part of themselves; they have integrated the complexity of themselves as an organism, to their surroundings. For example, an employee identifying with their job to the point their work becomes a part of them, though their motivation is still extrinsic (e.g., pay), their personal values and needs are assimilated with their work.

Slightly less internalized is *identified regulation*. This extrinsic motivation is a conscious awareness of a task or behavior as being valuable. Thus, work behavior may be driven by external outcomes but, in addition, the work related behavior also reflects the individual's complex self, which leads to a greater freedom in employees to do their work (Gagne & Deci, 2005). In *introjected regulation*, the least amount of internalization is present and it shares more similarities with the last type, which lacks any internal regulation. In introjected regulation, though, the motivation can be considered internal to the individual; it is driven by external factors (Gagne & Deci, 2005). For example, with introjected regulation, the employee may participate in work behaviors in order to maintain their own self-esteem or to not hurt their own egos. Finally, *external regulation*, has no internalization and is often considered hedonic in a sense; an employee may regulate their work behaviors in either gaining rewards or avoiding punishments (Ryan & Deci, 2000). External regulation is initiated based on how the employee perceives an external, desired outcome as related to their behavior, such as working only when supervised (Gagne & Deci, 2005)

SDT Applications. In a work context, SDT can be paramount. The emphasis SDT places on social and environmental factors in predicting motivation to accomplish a task (i.e., work), suggests there are actions practitioners can take to enhance employee's internalized motivation and ultimately task performance. Indeed, another sub theory within SDT termed cognitive evaluation theory, proposes social and contextual factors that encourage a sense of autonomy and competence, and would encourage internalized forms of motivation (Gagne & Deci, 2005). This is a prominent debate within SDT because, according to CET, external regulation could never be internalized to the extent of being useful within a work context. Supposedly, external, tangible rewards would have an *undermining* effect on intrinsic motivation (Gagne & Deci, 2005; Vallerand et al., 2008). Though evidence supported both sides, ultimately, meta-analytical evidence suggested common workplace external rewards (i.e., salary or unexpected bonuses) do not undermine the effect of intrinsic motivation (Deci, Koestner, & Ryan, 1999).

SDT and the Current Study. SDT is a useful over-arching framework of conceptualizing the proposed model between positive constructs and outcomes. SDT is comprehensive by capturing social and contextual factors in motivation and maintaining an emphasis on individual differences. CSE, a positive individual difference factor aligns well with SDT. Recall *evaluative* as the first criterion for a trait in CSE. Within SDT, individuals inherently desire to integrate a complex sense of self with their environment, thus being highly evaluative and developing a complex self-understanding would related to more intrinsic forms of motivation for high CSE individuals.

SDT contends two aspects: first, motivation is on a spectrum and, second, a drive for intrinsically regulated motivation is inherent to individuals. Recall the debate about

intrinsic motivation in flow research. In their work on flow, Fullagar and Kelloway (2009) differentiated between hedonic and eudaimonic methods of studying well-being to draw conceptual similarities with the latter form and flow. This dualism is similarly reflected in early work on SDT. Hedonic well-being would refer to the presence of pleasure and absence of pain (Fullagar & Kelloway, 2009), while hedonic motivation theories emphasize meeting individual needs and cognitive appraisals of behavioral consequences (Ryan & Deci, 2000). Fullagar and Kelloway suggested flow to be a narrower component or momentary (i.e., state-like) type of eudaimonic well-being. Thus SDT may hold novel information when examined in relationship to flow experiences.

Self-determination theory (SDT) is a useful over-arching framework of conceptualizing the proposed model of relationships among positive constructs. Moreover, SDT is aligned with the positive psychology paradigm. A main focus within positive psychology is optimized functioning, and SDT has potential to provide a “platform” for further understating how optimized functioning leads to positive organizational outcomes (Gagné & Vansteenkiste, 2014, p 61). Positive (organizational) psychology, early in its formative years, is ungrounded in some theoretical aspects and as researchers generally acknowledge this need (Cameron, Dutton, & Quinn, 2003; Luthans, 2002). Thus, SDT would provide at least a novel lens to understand the relationship (if any) between PsyCap, flow, and positive outcomes.

Hypothesis 4: Intrinsic motivation will be positively related to engagement.

Summary

An individual’s PsyCap describes their positive internal resources within context (e.g., at work) and in terms of the inextricable nature of affect, behaviors, and cognitions

in goal attainment. Flow, is a state of optimal functioning in a task, where nine dimensions describe the experience. POB encompasses the concepts of flow and PsyCap, as both have state-like tendencies (Fullagar & Kelloway, 2009; Nielsen & Cleal, 2010), have established intervention procedures (for a review of flow interventions see Nakamura & Csikszentmihalyi, 2009; for PsyCap see Luthans, et al., 2008), are predictors of valued work outcomes (Ko & Donaldson, 2011; Luthans, Avolio, Walumbwa, & Li, 2005), and have valid and reliable measures (Jackson & Eklund, 2002; Luthans, 2012). To date, there have been no published studies that examine the potential practical implications of using flow and PsyCap synergistically. Noting the presence of individual differences, both are determined to be predictors of engagement (Rich et al., 2010; Sweetman & Luthans, 2005) and, whether intrinsic or extrinsic, motivation must be a factor.

The Current Study

The current study used a carefully selected student sample to implicate the importance of measuring and manipulating positive constructs. Additionally, the referent task on which the student sample responded about (e.g., thesis, dissertation, etc.) was selected to represent tasks in a work environment. The study was be cross-sectional in nature, using established questionnaires to measure a dispositional predictor (CSE), a state-like predictor (PsyCap), an experiential predictor (flow), and a positive outcome variable (engagement). Students completed questionnaires using an online platform.

Graduate students were selected as they fit the criteria of a demographic known as emerging adults (Arnett, 2000). Concerning work, research by Arnett (2000) suggests emerging adults to be more serious and focused in job explorations, increasing

generalizability to an employed population. Additionally, it was found that honors students also fit this demographic based on their age, but also the study requirement of having a final thesis to complete.

To summarize, this study used graduate students with a thesis requirement as a proxy to better generalize to a working sample and to model the relationships among CSE, PsyCap, flow, engagement, and motivation. Though highly theoretical, steps were taken to ensure some ecological validity and to keep practitioners in mind. First, this study aimed to give additional evidence to the use of PCI as a means of increasing positive capacities of employees. Since it is out of the ability of the researcher to conduct an actual intervention, this link will be demonstrated statistically. Second, this study attempts to make the claim that PsyCap is highly related to flow experiences, and those with higher PsyCap have a higher tendency to experience flow at work. Keeping practitioners in mind, this study also features aspects of flow that are within the control of managers, supervisors, or organizations. This paper reviewed evidence that flow oriented jobs may increase work-valued outcomes, and proposed a model of positive constructs that includes dispositional, contextual, and experiential components. Further, in an attempt to be as comprehensive as possible, the model included affective, behavioral and cognitive components. Though only cross-sectional evidence, this research paper should lay some groundwork in how positive constructs could practically be used in organizations to create more beneficial organizations, for employee and employer.

Method

Participants

The total sample of 73 students included 54 students completing a graduate thesis, nine completing a dissertation, eight completing a final or other project, and one honors undergraduate thesis. Twenty-three participants were recruited locally at a large southeastern university. Additionally, recruitment also took place nationally at the annual conference for the Society of Industrial and Organizational Psychology, where 20 participants were recruited. Finally, correspondence with various graduate program directors resulted in 30 participants from 17 institutions. All students were in the process of completing a degree in psychology; 30 students were specific to I-O psychology. Participants completed all measures via an online platform. Participants were compensated five dollars cash.

Procedure

Participants received a secure link either by signing up at SIOP or from correspondence from their respective program director. Before beginning the questionnaire, participants read and accepted an informed consent statement that included the appropriate Institutional Review Board approval. Upon completing the questionnaire, participants were given another link that redirected them to a compensation file, separate from the data file to maintain anonymity. The second file prompted participants to enter necessary information for receiving compensation (i.e., name, email, mailing address, etc.).

Measures

Demographics. Demographics included age, gender, year in either honors undergraduate or year in graduate school, degree type, type of final project, final project start, and anticipated finish date (i.e., date of defense). One multiple choice item asked, “What was the source of your final project?” in an attempt to gauge how much a student’s project was conceived on their own. Responses included (a) myself, (b) part of advisor’s or another professor’s research, (c) my advisor and I, (d) other (fill in the blank). Further, a measure of thesis-relevant skills was borrowed from Shoenfelt, Kottke, and Stone (2013), who identified internship skills gained by psychology masters students, as both theses and internships have been evidenced to increase employability and work success. These skills were assessed to provide evidence of the type of skills that may be developed by working on a thesis or dissertation and to determine if the development of these skills is related to engagement. Further, one item asked for self-reported GPA as a performance measure, and one item asked students if they were employed. All demographic items are contained in appendix A.

PsyCap. The Psychological Capital Questionnaire (PCQ), measuring the PsyCap construct as state-like and contextual (Luthans et al., 2007), was adapted to measure how participants felt about themselves while completing their master’s thesis. The 24-item PCQ has been previously adapted for student use in predicting academic success and, in this study, yielded a Cronbach’s alpha of .90. Items are contained in appendix B. PsyCap was computed by summing the 24 items and resulted in a mean of 43.986 ($SD = 8.84$).

Self-Determination Theory. To measure the extent of self-determined motivation, the Academic Motivation Scale (AMS) developed by Vallerand et al. (1993)

was deemed most appropriate and is available in Appendix C. The scale has seven subscales that measure the continuum of self-determined motivation. All 36 items are on a five-point graphic rating scale, ranging from ‘did not correspond at all’ (1) to ‘corresponded exactly’ (5); the same stem is used for all 36 items (and followed by individual items for each scale, described further). The stem was adapted for this study to, “Why did you work on your thesis/dissertation/final project?” Intrinsic motivation to know was computed by adding items 2, 9, 16, and 23. Intrinsic motivation toward accomplishment was computed by adding items 6, 13, 20, and 27. Intrinsic motivation to experience stimulation was computed by adding items 4, 11, 18, and 25. Identified regulation was computed by summing items 3, 10, 17, and 24. Introjected regulation was determined by summing items 7, 14, 21, and 28. Items 1, 8, 15, and 22 were summed to measure external regulation; and to measure Amotivation, items 5, 12, 19, and 26 were summed.

An example of an item measuring identified regulation reads “Because I think that working on my dissertation will help me better prepare for the career I have chosen.” An item example from the introjected regulation subscale is “To prove to myself that I am capable of completing my dissertation.” An example of an externally regulated motivation subscale item is “Because without completing my dissertation I do not think I will find a high paying job later on.” The Amotivation subscale had a Cronbach’s alpha of .86; and an example item is “Honestly, I don’t know; I really feel that I am wasting my time on my dissertation.”

The intrinsic motivation to know subscale of the AMS has four items. An example item is “Because I experience pleasure and satisfaction while learning new

things.” This subscale yielded a Cronbach’s alpha of .79 in the current study. An example item from the subscale of intrinsic motivation toward accomplishment is, “For the pleasure I experience while surpassing myself in my studies;” this scale has a Cronbach’s alpha of .78. An example item from the final intrinsic motivation subscale, to experience stimulation is “For the intense feelings I experience when I am communicating my own ideas to others;” this subscale has a Cronbach’s alpha of .81. The scale is scored by creating a summed score for each subscale that can range from 4-20, except Integrated Regulation (8-40).

Additionally, the needs component of SDT is measured by the Modified Basic Psychological Needs Scale (MBPNS), which measures levels of autonomy, relatedness and competence (Gagne, 2003). Each scale in the 21-item measure has acceptable reliabilities at .69 (autonomy scale), .71 (competence scale), and .86 (relatedness scale; Gagne, 2003). The measure was adapted to the context of completing students’ thesis, dissertation, or final project. For example, an item from the autonomy scale reads, “I felt like I am free to decide for myself how to complete my thesis/dissertation/final project.” The measure was further adapted to keep uniform responding in the online format with five anchors instead of seven, that is, (1) ‘strongly disagree’ to (5) ‘strongly agree.’ The relatedness scale measures the social aspect, for example, “I really like the people I interact with while working on my thesis/dissertation/final project.” Seven items (i.e., items 3, 11, 15, 16, 18 19, and 20) were reversed scored. For example, item 3 in the competence subscale reads “Often, I do not feel very competent while working on my thesis/dissertation/final project.” After reverse scoring the appropriate items, summing

scores created indices for each subscale. Both, the AMS and MBPNS are available in appendix C.

Flow Propensity. The Short Dispositional Flow Scale (DFS-2; Jackson & Eklund, 2002) is a 9-item measure of flow frequency or propensity within a specified context. The measure was developed from the nine flow dimensions proposed by Csikszentmihalyi (1990), with one item capturing each dimension. Consideration was given to using the parallel form, Flow State Scale (FSS-2; Jackson & Eklund, 2002), but following recommendations from the developers, the FSS-2 would be inappropriate as it should be administered after a flow experience. Additional consideration was given to the more psychometrically beneficial long scales, but due the use of many measures in this study, it was deemed more appropriate to use the short form. The short form measure has an internal consistency of .81. In addition, the short form was developed from the long form, and confirmatory factor analyses demonstrated acceptable internal validities for the short form ($\chi^2 = 145.27$ df = 27). In this study, the DFS yielded a Cronbach's alpha of .78.

This retrospective use of the short DFS-2 as related to experiences in general has been previously used to draw nomological networks among flow and the FFM (Ross & Keiser, 2014) at the trait level. The current study, aimed at the state level, adapted the short DFS-2 to relate participants' thesis, dissertation or final project work. To illustrate the contextual adaptation, an item within the Clear Goals dimension reads, "I have a strong sense of what I want to do in my *thesis/dissertation/final project*." Respondents indicated on a five-point Likert scale the extent to which they agree with the item, each adaptation is available in appendix D. The short DFS-2 is scored with an average (i.e.,

adding all nine items and dividing by nine). The mean flow propensity was 3.38 ($SD = .627$).

Core Self-Evaluations. CSE was measured with the original 12 items developed by Judge, Erez, Bono, and Thoresen (2003). CSE has an established test-retest reliability of .81, an inter-rater reliability of .43 (i.e., self and other rating), and an overall reliability estimate derived from four heterogeneous samples ($N = 786$; Judge, Erez, Bono, & Thoresen, 2003) of .84. The authors report construct validity using confirmatory factor analysis of a single core CSE factor an average chi square of 97.51 ($df = 48$; Judge et al., 2003). In addition, CSE has demonstrated convergent validity with the trait measures CSE subsumes: self-esteem ($r = .87$), generalized self-efficacy ($r = .82$), neuroticism ($r = .76$), though less with locus of control ($r = .50$), though lower still significant. Judge et al. (2003) discussed the discriminant validity and distinctiveness of CSE with the five-factor model. There are moderate correlations with conscientiousness and extraversion ($r = .51$ and $r = .50$, respectively), and no significant relationships were evidenced with agreeableness and openness, suggesting CSE is different from the five-factor model. Six of the 12 items on the CSE scale are reversed scored, and three items reflect each sub-dimension. Participants are instructed to respond on a five-point Likert scale the extent to which they (1) strongly agree to (5) strongly disagree. Items are available in appendix E. The current sample yielded a Cronbach's alpha of .47; the mean of the current sample was 42.40 ($SD = 6.65$).

Engagement. To assess engagement, the Intellectual Social Affective (ISA) Employee Engagement Scale (Soane et al., 2012) was adapted for the emerging adult population. The scale was developed to measure three dimensions that are rooted in

Kahn's (1990) original work on engagement. Kahn operationalized engagement to have three components (i.e., cognitive, social, affective) and the items of the sub-dimensions reflect a work-role focus (i.e., intellectual), activation (i.e., initiating social interaction), and positive affect (i.e., affective). Each sub-scale of the ISA Engagement Scale has three items. Principal components analysis evidenced factor loadings of .73 (intellectual scale), .60 (social scale), and .98 (affective scale), respectively for each subscale, and a Cronbach alpha of .88 for the scale as a whole. Items are responded to on a Likert scale, (1) strongly disagree) to (5) strongly agree. To adapt this scale for the current study, 'graduate school' or 'thesis' was substituted for 'work'. An example of social engagement became, "I share the same graduate school goals as my colleagues." Similarly, for affective engagement, the adapted item reads, "I am enthusiastic in my thesis/dissertation/final project completion." In the current study, total scale yielded a Cronbach's alpha of .84, and the average total student engagement score was 33.9 ($SD = 6.19$).

Results

All hypotheses were tested by calculating bivariate correlations between the hypothesized variable and Total Engagement. The correlation matrix may be found in Appendix G.

The first hypothesis, that Flow Propensity will have a positive relationship with Total Engagement, as tested with bivariate correlation resulted in $r = .65, p < .01$. Thus, Hypothesis 1 was supported. Additionally, of the three engagement subscales, Affective Engagement correlated with Flow Propensity the greatest, $r = .74, p < .01$, followed by Cognitive Engagement, $r = .44, p < .01$; Social Engagement had no significant

relationship with Flow Propensity. Flow Propensity was related to only one of the thesis skills measured, time management ($r = .28, p < .05$).

The second hypothesis, that PsyCap will have a positive relationship with Total Engagement, was supported, $r = .71, p < .01$. Similar to the relationships between Flow Propensity and the engagement subscales, PsyCap was most strongly related to Affective Engagement, $r = .70, p < .01$, followed by Cognitive Engagement, $r = .65, p < .01$; no significant relationship was found between PsyCap and Social Engagement. Additionally, PsyCap was significantly related to Flow Propensity, $r = .70, p < .01$. PsyCap was significantly related to five skills developed in thesis work: time management ($r = .24, p < .05$), written communication skills ($r = .24, p < .05$), interpersonal skills ($r = .26, p < .05$), and organizational survival skills ($r = .26, p < .05$).

The third hypothesis tested examined the relationship between CSE and Total Engagement. The third hypothesis was supported; $r = .25, p < .05$. Additionally, only one of the engagement subscales (Affective) related to CSE, $r = .37, p < .01$. CSE also was significantly related to Flow Propensity, $r = .37, p < .01$, and PsyCap, $r = .43, p < .01$. CSE had significant relationships with four thesis skills. Written communication had the strongest relationship with CSE ($r = .41, p < .01$), followed by time management skills ($r = .27, p < .05$), organization skills ($r = .27, p < .05$), and project management skills ($r = .26, p < .05$).

To test the fourth hypothesis, that intrinsic motivation will be related to Total Engagement, several analyses were conducted. The strongest relationship to Total Engagement was between Intrinsic Motivation to Know ($r = .48, p < .01$) and Intrinsic Motivation to Accomplish ($r = .48, p < .01$). Consistent with the spectrum of SDT, the

next strongest relationship to Total Engagement was with Intrinsic Motivation to Experience Stimulation ($r = .45, p < .01$), followed by Identified Regulation ($r = .42, p < .01$), and Introjected Regulation ($r = .40, p < .01$). External Regulation is at the opposite end from Intrinsic Motivation on the SDT spectrum and did not significantly correlate with Total Engagement. Finally, Amotivation, anchoring the other end of the spectrum, was negatively related to Total Engagement, $r = -.28, p < .05$. To further test these relationships, a stepwise multiple regression was conducted. The results indicated Intrinsic Motivation to Accomplish explained 22.5% of variance in Total Engagement ($R^2 = .225, F(1, 70) = 20.36, P < .001$). None of the other subscales entered into the equation.

Additionally, correlations between the engagement subscales with types of motivation revealed Affective Engagement followed the same pattern as did Total Engagement. The strongest relationships with Affective Engagement were with Intrinsic Motivation to Know ($r = .56, p < .01$), Intrinsic Motivation to Accomplish ($r = .56, p < .01$), Intrinsic Motivation to Experience Stimulation ($r = .54, p < .01$); the magnitude of the correlations steadily decreased with more extrinsic forms of regulation such as Identified ($r = .47, p < .01$) and Introjected ($r = .41, p < .01$). Affective Engagement was not related to External Regulation and had a negative relationship with Amotivation ($r = .37, p < .01$). The Cognitive Engagement subscale was significantly related to only the intrinsic forms of motivation: Intrinsic Motivation to Know ($r = .31, p < .01$), Intrinsic Motivation to Accomplish ($r = .30, p < .01$) and Intrinsic Motivation to Experience Stimulation ($r = .34, p < .01$). The Social Engagement subscale correlated significantly with only Introjected External Motivation ($r = .33, p < .01$).

The MBPNS measures three SDT constructs. All three were significantly related to Total Engagement: Relatedness ($r = .52, p < .01$), Autonomy ($r = .27, p < .05$), and Competence ($r = .53, p < .01$). Of the engagement subscales, only Affective Engagement significantly related to each of the three components of MBPNS; Competence had the strongest relationship ($r = .63, p < .01$), followed by Relatedness ($r = .59, p < .01$), and Autonomy ($r = .41, p < .01$).

Additional Analyses

Stepwise regression was used to evaluate the relationship of PsyCap, Flow Propensity, and CSE to Total Engagement. Two factors were significant predictors of Total Engagement ($R^2 = .55, F(2, 69) = 42.64, p < .001$). PsyCap entered the model first ($R^2 = .51$), followed by Flow Propensity (R^2 change = .04); CSE did not enter the equation.

Stepwise regression was used to evaluate the relationship between components of SDT and Total Engagement. Three factors were significant predictors of Total Engagement ($R^2 = .43, F(3, 68) = 17.07, p < .001$). Competence entered the model first ($R^2 = .29$), followed by Experiencing Stimulation (R^2 change = .11), followed by Introjected Regulation (R^2 change = .04).

Discussion

Flow

It is no surprise that, of all engagement subscales, Affective Engagement had the strongest relationship with Flow Propensity. There are several explanations for this relationship. First, flow and engagement are both positive constructs (Nakamura & Csikszentmihalyi, 2009; Soane et al. 2012) and, because flow is generally considered a

state, it is intuitive that Affective Engagement (i.e., positive affect) would be involved in optimizing a flow experience. Additionally, because flow occurs when an individual is involved in completing a task, a level of Cognitive Engagement also should be present. The lack of relationship between Flow Propensity and Social Engagement also would be expected. Although flow is not conceptually devoid of a social aspect (such as receiving feedback or not being self-conscious of others), it is largely intrapersonal.

PsyCap

As constructs, PsyCap and Flow Propensity are similar in that they are both positively oriented and state-like. PsyCap is a measure of *how* one's degree of hope, optimism, efficacy, and resilience combine within a specific context (e.g., thesis completion or work). It is reasonable PsyCap would facilitate the propensity to experience flow within a given context. It is not surprising that PsyCap's strongest relationships with the engagement subscales followed the same pattern as did Flow Propensity's relationships with the engagement subscales (i.e., strongest with Affective Engagement, followed by Cognitive Engagement, and no relationship with Social Engagement). Flow Propensity and PsyCap both likely had a strong relationship with Affective Engagement due to the positivity inherent in each construct. Although PsyCap and Flow Propensity both followed the same pattern of relationships to the engagement subscales, one difference is in the strength of the relationship of Total Engagement to PsyCap ($r = .71$) and Flow Propensity ($r = .65$). Additionally, when comparing PsyCap and Flow Propensity correlations to engagement subscales (i.e., Affective Engagement and Cognitive Engagement), the difference in the magnitude of the relationship between the two variables was much greater for Flow Propensity (.74 and .44, respectively) than

for PsyCap (.70 and .65, respectively). The smaller magnitude of the relationship between Flow Propensity and Cognitive Engagement supports previous notions that flow is a much narrower construct than PsyCap (Luthans et al., 2007), and offers a possible explanation why PsyCap accounted for more variance in predicting Total Engagement than did Flow Propensity. PsyCap accounted for 51% of the variance in Total Engagement and, although significant, Flow Propensity only added 4% to explained variance.

Additionally, that both PsyCap and Flow Propensity failed to demonstrate a relationship with Social Engagement is rational. Although neither construct completely lacks interpersonal factors, they are largely intrapersonal concepts. Thus, it stands to reason that Social Engagement was not relevant to engagement to complete a thesis.

Core Self-Evaluations

PsyCap is state-like and specific to a given context such as work or thesis completion. CSE, a dispositional trait, is considered to be a trait-like personality construct and much less malleable than PsyCap. The breadth of CSE is evident in its sub dimensions of self-esteem, self-efficacy, emotional stability, and locus of control, general behavioral tendencies with influence beyond the work context. That CSE is a general construct may be the reason it had the weakest relationship to Total Engagement evidenced in this study ($r = .25$). Recall that all of the engagement scales were context specific and referenced “thesis, dissertation, or final project.” Thus, it is not surprising that the general construct of CSE evidenced a weaker relationship with Total Engagement than did the context specific Flow Propensity and PsyCap. Although CSE was not a significant predictor of Total Engagement in the regression analysis, CSE did

significantly correlate with Flow Propensity ($r = .37$), PsyCap ($r = .43$), and Affective Engagement ($r = .37$).

Self Determination Theory

The SDT components of the three basic needs and the six types of motivation were regressed on Total Engagement. Of the three SDT components of Relatedness, Autonomy, and Competence, Competence explained the most variance in Total Engagement, 28%. Intrinsic Motivation to Experience Stimulation explained an additional 10% of variance in Total Engagement. Motivation to Experience Stimulation is defined as the feelings experienced when communicating ideas to others, a process that is present during the completion of a thesis. Individuals who are high in this type of motivation are likely to be intrinsically motivated to complete their thesis. The extrinsic form of motivation known as Introjected Regulation was the final significant factor in the regression equation, explaining 4% of the variance in Total Engagement. This form of motivation is adjacent to External Regulation on the SDT spectrum and is defined as regulating behaviors based on maintaining one's own self-esteem or ego. Although individuals who are introjected regulated are not intrinsically motivated for the task of completing their thesis, they recognize the importance of the thesis and engage in thesis completion behaviors for their own self-worth to avoid harm to their own ego or self-esteem.

The SDT components of Relatedness, Autonomy, and Competence all had significant correlations with Total Engagement. Among the specific subscales of engagement, Affective Engagement had the strongest relationship with Total Engagement (i.e., Relatedness, $r = .59$; Autonomy, $r = .41$; Competence $r = .63$). As mentioned above,

Affective Engagement had the strongest relationship with PsyCap ($r = .70$) and Flow Propensity ($r = .74$).

Implications

Results of this study indicate that PsyCap and Flow Propensity are factors that relate primarily to Cognitive and Affective Engagement in the thesis completion process. Implications of this study rely on evidence that PsyCap can be increased for a given context. PCI methods have previously been used with students; the present research suggests the benefits of PCI would likely affect Total Engagement in thesis completion. This study evidenced strong relationships between PsyCap and Total Engagement ($r = .71$), Affective Engagement ($r = .70$), and Cognitive Engagement ($r = .65$), implying that an increase in PsyCap would be accompanied by an increase in engagement. Additionally, the four sub-dimensions of PsyCap conceptually represent how an individual uses their positive and developable psychological capacities for goal attainment. As such, motivation to complete the thesis should increase following a successful PCI. In this study, PsyCap demonstrated a negative relationship to Amotivation ($r = -.24$), and positive relationships with extrinsic Identified Regulation ($r = .29$) and all three intrinsic motivation measures (Intrinsic Motivation to Know, $r = .38$, Intrinsic Motivation to Accomplish, $r = .38$, and Intrinsic Motivation to Experience, $r = .37$). These results suggest that as individual PsyCap increases, the Amotivation one experiences decreases, while regulations that foster goal attainment increase.

Flow Propensity explained only 4% more variance in Total Engagement beyond that explained by PsyCap. However Flow Propensity and PsyCap share 50% variance in common. The significant relationships Flow Propensity displayed with all constructs

suggests Flow Propensity is a relevant construct and should not be ignored. PsyCap is a broader measure and its relationship with Flow Propensity should be investigated in future studies, perhaps using the ESM method and with an experimental design as oppose to the cross-sectional design used in the research. The specificity of different flow dimensions could be manipulated at the task level within PCI to investigate the efficacy for each dimension on task performance.

CSE has received increased attention in the research literature over the past decade (Ferris et al., 2012). This study provides some evidence to discriminate between PsyCap and CSE. As described throughout this paper, conceptually many of the sub dimensions of CSE and PsyCap overlap (e.g., CSE's generalized self-efficacy and PsyCap's self-efficacy), but are different in terms of their context as PsyCap is context specific while CSE is a general personality tendency. Recent studies (Bowling, Wang, Tang, & Kennedy, 2010; Machado et al., 2016) explored more specific CSE. Bowling et al. found criterion-related validity for task-specific CSE with incremental validity over CSE alone for most of their criteria. These results suggest task specific CSE and PsyCap may have a relationship that was not observed in the current study. Future research should examine the relationships among positive constructs at the same level.

Limitations

A conceptual limitation of the current study is that all constructs in this study were positively oriented. Future research should consider adding other constructs to better understand the underlying dynamics among the five constructs studied. Previous research on these five constructs provides some evidence regarding constructs that have demonstrated no relationship or negative relationships: negative relationship between

PsyCap and CWBs (Avey et al., 2010); negative relationship between CSE and Negative Affectivity (Heller, Judge, & Watson, 2002); no significant mean differences in Flow states between BAS/BIS groups (Kiklevich, 2011). Other constructs that might prove useful in predicting engagement might include Carver and Scheier's (2002) BAS/BIS, OCB's, and objective performance measures. Additionally, Fredrickson's (2001) Broaden and Build Theory of positive psychology could make a good conceptual framework for future studies.

Another limitation of the current study is common method variance (CMV). Data were collected on five constructs via "paper and pencil" instruments in a single session. Collecting data longitudinally at the completion of 'check points' in the thesis process (e.g., literature review, proposal, data collection, analysis, discussion) would be interesting to determine the role of relevant predictors throughout the process. Additionally, advisors could rate their thesis students on relevant constructs.

A specific limitation of the DFS-2 is in its general framing of a flow experience as compared to the FSS-2, which is intended to be used immediately after or during a potential flow experience. The DFS-2 is much less sensitive in detecting a flow experience as it is administered well after a flow experience, and may account for the small amount of variance in Total Engagement accounted for by Flow Propensity. Recently (Fullagar & Kelloway, 2009), the FSS-2 was adapted as an ESM, where flow was measured via text messaging one letter (a, b, c, d, e) responses to the FFS-2 while completing a specific task. ESM is designed to be non-invasive to the flow experience by taking as little time possible to respond.

Finally, future research on thesis completion should include measures of actual thesis performance. Such measures might include thesis quality, thesis progress, or thesis completion.

Conclusion

The current research found positive relationships between PsyCap and Flow Propensity with Engagement. As an emerging sub-field, positive organizational psychology is still in need of exploratory studies such as this to advance a working nomological network of constructs. This study examined a number of positive constructs measured at various levels (i.e., task/experience, state, and trait) and found nearly all of the constructs demonstrated a positive relationship with Engagement. Results demonstrated that PsyCap and Flow Propensity had the strongest relationship with Engagement, a novel result that, to the author's knowledge, previously has been implicated but not observed. This study included developable and manageable constructs that have implications in applied settings for increasing engagement.

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APPENDIX A

Informed Consent and Demographics



You are being asked to participate in a project conducted through Western Kentucky University by Nick Sivek. By continuing and completing this questionnaire, you give your consent to participate in this project.

If you have any questions, you may send an email to nikolaj.sivek601@topper.wku.edu.

You will complete an online questionnaire that will take approximately 30-40 minutes. After completing the questionnaire, you will be given the opportunity to register for a \$10 cash thank you gift, which can be picked up in GRH 3008 on the WKU campus. Your responses to the questionnaire are independent of your registering for the \$10 cash gift. That is, your questionnaire responses will be recorded in a separate file and cannot be linked to your registration for the \$10. Your responses are anonymous.

There are no known risks to completing this questionnaire.

Refusal to participate in this study will have no effect on any future services you may be entitled to from the University. Anyone who agrees to participate in this study is free to withdraw from the study at any time with no penalty.

You may stop the questionnaire at any time, however, you must complete the questionnaire to receive the compensation.

THIS PROJECT HAS BEEN REVIEWED AND APPROVED BY
THE WESTERN KENTUCKY UNIVERSITY INSTITUTIONAL REVIEW BOARD
Paul Mooney, Human Protections Administrator
TELEPHONE: (270) 745-2129

>>



What is your age:

Gender:

☐ Male

☐ Female

☐ Prefer to not answer

Enter the year you are in your program.

☐ Honors Undergraduate

☐ Master's Program

☐ Doctoral Program

☐ Other

Degree you are working to earn (please enter specific name)

☐ Master of Arts

☐ Master of Science

☐ Doctor of Education

☐ Doctor of Physical Therapy

☐ Other

Program Requirement:

☐ Undergraduate Thesis

☐ Graduate Thesis

☐ Dissertation

☐ Final Project

☐ Other:

Estimate when you began your program requirement (e.g., thesis, final project, dissertation)?

MM/DD/YR

When is your thesis or dissertation defense or when is your final project due?

MM/DD/YR

What is your expected GPA at graduation?

Had you not selected your project, do you think someone else would have done the same project?

- ☐ Yes
☐ No

What was the source of your thesis project?

- ☐ Myself
☐ Part of my advisor's or professor's research
☐ My professor/advisor came up with the idea together
☐ My professor/advisor guided my idea
☐ Other

Are you currently employed? Please describe.

- ☐ No
☐ Yes, Graduate Assistantship, Teaching Assistant, or Research Assistantship. Hours a week:

☐ Yes, full time at _____ for _____ hours a week.

☐ Yes, part time at _____ for _____ hours a week.

☐ Other

The following skills were developed in completing my thesis, dissertation, final project.

Note: If the skill is not relevant to your thesis, dissertation, or final project, please select "Skill did not apply"

	SKILL DID NOT APPLY	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Project Management Skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data Management Skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data Analysis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technical Writing Skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Time Management Skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organizing Skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Problem Solving Skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organizational Communication Skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Written Communication Skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interpersonal Skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organizational Survival Skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Critical Thinking Skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appraisal of Previous Research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

>>>

APPENDIX B

Psychological Capital Measure

Instructions: Below are statements that describe how you may think about yourself in completing your thesis, dissertation, or final project. Use the following scales to indicate your level of agreement or disagreement with each statement.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel confident analyzing a long-term problem to find a solution in working on my thesis/dissertation/final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel confident in representing my thesis/dissertation/final project work in meetings with professors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel confident contributing to discussion about my thesis/dissertation/final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel confident helping to set targets/goals in my thesis/dissertation/final project work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel confident contacting people outside my thesis/dissertation/final project committee (e.g., professors outside the department, university) to discuss problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel confident presenting information to a group of similar students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I should find myself in a jam in thesis/dissertation/final project work, I could think of many ways to get out of it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At the present time, I am energetically pursuing my thesis/dissertation/final project goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are lots of ways around any problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Right now I see myself as being pretty successful in thesis/dissertation/final project work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can think of many ways to reach my current thesis/dissertation/final project goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At this time, I am meeting the thesis/dissertation/final project goals that I have set for myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I have a setback in thesis/dissertation/final project work, I have trouble recovering from it, moving on.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I usually manage difficulties one way or another in thesis/dissertation/final project work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can be "on my own," so to speak, in thesis/dissertation/final project work if I have to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I usually take stressful things in thesis/dissertation/final project work in stride.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can get through difficult times in thesis/dissertation/final project work because I've experienced difficulty before.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel I can handle many things at a time in thesis/dissertation/final project work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When things are uncertain for me in thesis/dissertation/final project work, I usually expect the best.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If something can go wrong for me in terms of thesis/dissertation/final project, it will.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I always look on the bright side of things regarding my thesis/dissertation/final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm optimistic about what will happen to me in the future as it pertains to my thesis/dissertation/final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In thesis/dissertation/final project work, things never work out the way I want them to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I approach my thesis/dissertation/final project as if "every cloud has a silver lining."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

APPENDIX C

Self-Determination Theory

Measures

Note: The Modified Basic Psychological Needs Scale appears first followed by Academic Motivation Scale

Please read each of the following items carefully, thinking about how it relates to your thesis, dissertation, or final project experience. Then indicate how much you disagree or agree (i.e., strongly disagree, disagree, neither agree or disagree, agree, strongly agree).

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
I feel like I am free to decide for myself how to complete my thesis, dissertation, or final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I really like the people I interact with while working on my thesis, dissertation, or final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Often, I do not feel very competent while working on my thesis, dissertation, or final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel pressured to complete my thesis, dissertation, or final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People I know tell me I am doing a good job on my thesis, dissertation, or final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get along with people I come into contact with for my thesis, dissertation, or final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I pretty much work by myself on my thesis, dissertation, or final project, and I do not have a lot of outside help.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I generally feel free to express my ideas and opinions for my thesis, dissertation, or final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I consider the people I regularly interacted with on my thesis, dissertation, or final project to be my friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to learn interesting new skills while working on my thesis, dissertation, or final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In regard to my thesis, dissertation, or final project, I frequently have to do what I am told.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People I worked with on my thesis, dissertation, or final project care about me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most days, I feel a sense of accomplishment from working on my thesis, dissertation, or final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People I interacted with on my thesis, dissertation, or final project tend to take my feelings into consideration.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In regard to my thesis, dissertation, or final project, I do not get much of a chance to show how capable I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are not many people that I work on my thesis, dissertation, or final project with that I am close to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel like I can pretty much be myself while working on my thesis, dissertation, or final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The people I interact with while working on my thesis, dissertation, or final project do not seem to like me much.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often do not feel very capable when it comes to completing my thesis, dissertation, or final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are not many opportunities for me to decide for myself how to do things on my thesis, dissertation, or final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People I interact with while working on my thesis, dissertation, or final project are pretty friendly towards me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Academic Motivation Scale

Using the scale below (i.e., did not correspond at all, corresponded a little, corresponded moderately, corresponded a lot, corresponded exactly), indicate to what extent each of the following items corresponds to *one* of the reasons for completing your thesis, dissertation, or final project.

WHY DID YOU WORK ON YOUR THESIS, DISSERTATION, OR FINAL PROJECT?

	Did not correspond at all	Corresponded a little	Corresponded moderately	Corresponded a lot	Corresponded exactly
Because without completing my thesis, dissertation, or final project, I do not think I will find a high paying job later on.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because I experience pleasure and satisfaction while learning new things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because I think that working on my thesis, dissertation, or final project will help me better prepare for the career I have chosen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For the intense feelings I experience when I am communicating my own ideas to others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Honestly, I don't know; I really feel that I am wasting my time on my thesis, dissertation, or final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For the pleasure I experience while surpassing myself in my studies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To prove to myself that I am capable of completing my thesis, dissertation, or final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In order to obtain a more prestigious job later on.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For the pleasure I experience when I discover new things never seen before.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because eventually it will enable me to enter the job market in a field that I like.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For the pleasure I experience when I read interesting authors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I once had good reasons for completing my thesis, dissertation, or final project; however, I wonder whether I should continue.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For the pleasure that I experience while I am surpassing myself in one of my personal accomplishments.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because of the fact that when I succeed on my thesis, dissertation, or final project, I feel important.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because I want to have "the good life" later on.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For the pleasure that I experience in broadening my knowledge about subjects which appeal to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because my thesis, dissertation, or final project helps me make a better choice regarding my career orientation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For the pleasure that I experience when I feel completely absorbed by what certain authors had written.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can't see why I am completing my thesis, dissertation, or final project, and, frankly, I couldn't care less.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For the satisfaction I feel when I was in the process of accomplishing difficult academic activities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

To show myself that I am an intelligent person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In order to have a better salary later on.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because my thesis, dissertation, or final project allows me to continue to learn about many things that interest me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because I believe that completing my thesis, dissertation, or final project would improve my competence as a worker.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For the "high" feeling that I experience while reading about various interesting subjects.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't know; I can't understand what I am doing while completing my thesis, dissertation, or final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because working on my thesis, dissertation, or final project allows me to experience a personal satisfaction in my quest for excellence as a graduate (or honors undergraduate) student.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because I want to show myself that I can succeed on my thesis, dissertation, or final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because it is consistent with what I value.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I described myself to others, I usually include the fact that I am completing my thesis, dissertation, or final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because completing my thesis, dissertation, or final project is an important aspect of how I perceived myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Others see me as someone who is completing his or her thesis, dissertation, or final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because I value the way completing my thesis, dissertation, or final project allows me to make changes in my life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would feel a real loss if I were forced to give up on completing my thesis, dissertation, or final project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because I feel the change that takes place through completing my thesis, dissertation, or final project become a part of me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Completing my thesis, dissertation, or final project is a big part of who I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

APPENDIX D

Dispositional Flow Scale - 2



In general, when I work on my thesis, dissertation, final project:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel I am competent enough to meet the demands of the situation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do things spontaneously and automatically without having to think.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a strong sense of what I want to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a good idea about how well I am doing while I am involved in the task.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am completely focused on the task at hand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a feeling of total control over what I am doing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am not worried about what others may be thinking of me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The way time passes seems to be different from normal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The experience is extremely rewarding.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Appendix E

Core Self-Evaluations Scale

Below are listed several statements about which you may agree or disagree. Using the response scale below, indicate your agreement or disagreement with each item by clicking the appropriate button (i.e., strongly disagree, disagree, neutral, agree, strongly agree).

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am confident I get the success I deserve in life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sometimes I feel depressed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I try, I generally succeed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sometimes when I fail I feel worthless.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I complete tasks successfully.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sometimes, I do not feel in control of my work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I am satisfied with myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am filled with doubts about my competence.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I determine what will happen in my life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not feel in control of my success in my career.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am capable of coping with most of my problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are times when things looks pretty bleak and hopeless to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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APPENDIX F

Student Engagement Scale



For the following questions, think about working on your thesis, dissertation, final project.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I focus hard on my thesis/dissertation/final project work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I concentrate on my thesis/dissertation/final project work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I pay a lot of attention to my thesis/dissertation/final project work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For the following questions, think about working on your thesis, dissertation, final project.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I share the same graduate (or honors undergraduate) school values as my colleagues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I share the same graduate school (or honors undergraduate) goals as my colleagues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I share the same graduate school (or honors undergraduate) attitudes as my colleagues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For the following questions, think about working on your thesis, dissertation, final project.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel positive about my thesis/dissertation/final project completion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel energetic in my thesis/dissertation/final project completion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am enthusiastic in my thesis/dissertation/final project completion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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APPENDIX G

Correlation Matrix for all Variables

Measures	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Flow Prop.																
2. PsyCap	.70**															
3. CSE	.37**	.43**														
MBPNS																
4. Relatedness	.41**	.45**	.46**													
5. Autonomy	.46**	.35**	.28*	.37**												
6. Competence	.54**	.65**	.55**	.68**	.31**											
Intrinsic																
Motivation																
7. To Know	.34**	.38**	.05	.48**	.16	.33**										
8. To Accomplish	.48**	.38**	.26*	.53**	.24*	.42**	.79**									
9. Experience	.42**	.37**	-.04	.34**	.25*	.25*	.82**	.71**								
Stimulation																
Extrinsic																
Regulation																
10. Identified	.31**	.29*	-.00	.29*	.15	.21	.65**	.64**	.58*							
11. Introjected	.33**	.19	.14	.51**	.16	.19	.60**	.74**	.43**	.54*						
12. External	.16	.14	-.00	.07	.18	-.00	.26*	.27*	.23	.64**	.46**					
Regulation																
13. Amotivation	-.08	-.24*	-.34**	-.47**	-.08	-.58**	-.13	.19	-.00	-.14	-.09	.21				
Engagement																
14. Affective	.74**	.70**	.37**	.59**	.41**	.63**	.56**	.56**	.54**	.47**	.41**	.16	-.37**			
15. Social	.20	.18	-.00	.32**	.16	.10	.13	.15	.07	.18	.33**	.14	-.01	.16		
16. Cognitive	.44**	.65**	.16	.20	-.00	.41**	.31**	.30**	.34**	.27	.12	-.01	-.21	.56**	.11	
17. Total	.65**	.71**	.25*	.52**	.27*	.53**	.48**	.48**	.45**	.42**	.40**	.14	-.28*	.81**	.57**	.78**
Engagement																

Note: * $p < .01$; ** $p < .05$